

Amendments to the Claims

Claim 1 (Currently amended): A method of increasing or inducing cold or freezing tolerance in rosacea species plant, or gramineae plant or grass plant, which comprises the following steps:

- a) acclimating said plant to a temperature not lower than the coldest temperature that said plant is capable of withstanding, for a time sufficient to induce cold or freezing tolerance in said plant, and
- b) increasing the concentration of betaine or a derivative thereof ~~to a non toxic concentration~~ in said plant to induce cold or freezing tolerance in said plant, the concentration being non-toxic wherein chlorosis does not occur in the plant;

whereby combined steps a) and b) increase or induce cold or freezing tolerance of said plant over and above the cold or freezing tolerance of the normal genotypic potential induced by each step alone.

Claim 2 (Original): A method as set forth in claim 1, wherein the increased or induced cold or freezing tolerance in said plant decreases the lethal temperature of said plant.

Claim 3 (Original): A method as set forth in claim 1, wherein the step of increasing the concentration of betaine or a derivative thereof includes administering a composition comprising betaine or a derivative thereof to said plant.

Claim 4 (Currently amended): A method as set forth in claim 1, wherein the plant comprises a gramineae species plant and the step of increasing the concentration of betaine or a derivative thereof includes overexpressing in the gramineae species plant one or more genes involved in the synthesis of betaine or a derivative thereof selected from the group consisting of betaine dehydrogenase and choline monooxygenase.

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Claims 5-8 (Cancelled)

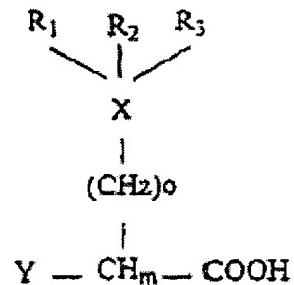
Claim 9 (Original): A method as set forth in claim 1, wherein steps a) and b) are substantially simultaneous.

Claim 10 (Original): A method as set forth in claim 1, wherein step b) precedes step a)..

Claim 11 (Original): A method as set forth in claim 1, wherein step b) follows step a).

Claim 12 (Original): A method as set forth in claim 1, wherein said betaine or the derivative thereof comprises glycine betaine.

Claim 13 (Original): A method as set forth in claim 1, wherein said betaine or the derivative thereof comprises a compound of the formula



wherein X is N or S

z is 1 or 2

o is 0 or 1

m is 1 or 2

R, R₂, R₃ are independently void or hydrogen or methyl

Y is void or Q-CH_w-

wherein w is 1 or 2,

Q is a molecule of 2 to 9 carbon atoms comprising or not a ketone or a hydroxyl group, which may comprise 1 or 2 nitrogen or sulfur atoms and which may form a heterocycle alone or with X.

Claim 14 (Original): A method as set forth in claim 1, wherein said betaine or derivative thereof is selected from Glycinebetaine, β-alaninebetaine, 2-trimethylamino-6-ketoheptanoate, prolinebetaine, proline, N-methyl-L-proline, trans-4-hydroxy-N-methyl-L-proline, *cis*-3-hydroxy-N-methyl-L-proline, (-)-4-hydroxyproline betaine, (+)-4-hydroxyprolinebetaine, 3-

hydroxyprolinebetaine, histidinebetaine, tryptophanbetaine, 2-mercaptopohistidine-betaine, pipecolabetaine and nicotinic acid betaine.

Claim 15 (Cancelled)

Claim 16 (Previously amended): A method as set forth in claim 1, wherein said plant is selected from the group consisting of roses, strawberry, golf turf, barley and wheat.

Claim 17 (Previously amended): A method as set forth in claim 1, wherein said plant comprises golf turf.

Claim 18 (Previously amended): A method as set forth in claim 3, wherein said composition comprises glycine betaine at a concentration lower than about 500 mM.

Claim 19 (Previously amended): A method as set forth in claim 12, wherein said glycine betaine is present at a concentration of about 250 mM.

Claim 20 (Previously amended): A method as set forth in claim 13, wherein said compound is present at a concentration of about 250 mM.

Claim 21 (Original): A method as set forth in claim 17, wherein the method increases winter survival, spring regrowth, greening or density of golf turf.

Claim 22 (Currently amended): A method as set forth in claim 1 or claim 20, wherein the increase in freezing tolerance is by at least about 6°C.

Claim 23 (Cancelled)

Claim 24 (Previously amended): A method as set forth in claim 1, which further results in improving regrowth, greening and resistance to photoinhibition of said rosacea species, gramineae species and grasses at cold or freezing temperatures of about 6°C to about -17°C.

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Claims 25-37 (Cancelled)

Claim 38 (Previously added): A method as set forth in claim 1, wherein said acclimation temperature and said coldest temperature that said rosacea species, gramineae species and grasses are capable of withstanding is between 6°C to about -17°C.

Claim 39 (Previously added): A method as set forth in claim 1, wherein said gramineae species and grasses are selected from a group of gramineae species and grasses sensitive to temperatures between 6°C to about -17°C.